5348

Form 504
Ed. June, 1928

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
R.S.Patton, *Director*

State: Maryland

DESCRIPTIVE REPORT

~~*Topographic*~~
Hydrographic } *Sheet No. 2* 5348

LOCALITY

Off the Coast of Maryland

Center-Lat. 38°-15', Long. 74°-57'

19 33

CHIEF OF PARTY

H.A.Seran

U. S. GOVERNMENT PRINTING OFFICE: 1928

5348

Form 537
11—5812

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

REG. NO. 5348

HYDROGRAPHIC TITLE SHEET

The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

Field No. 2

REGISTER NO. 5348

State Maryland

Large
Small

General locality Offshore Maryland Coast

Locality Eastward of Great Gull Bank

Scale 1:40,000 Date of survey May-Sept, 1933, ~~192~~

Vessel OCEANOGRAPHER and LYDONIA

Chief of Party H. A. Seran and Ray L. Schoppe

Surveyed by Field Force

Protracted by ~~Raymond~~ H. Carstens

Soundings penciled by F. S. Trantham

Soundings in ~~fathoms~~ feet

Plane of reference M.L.W.

Subdivision of wire dragged areas by

Inked by C. P. Bush

Verified by W H Bamford & C P Bush

Instructions dated April 27, 1933, ~~192x~~

Remarks:

Applied to Chart 1220. GPO Oct. 1934 - H. S. Gamble
Examination after review July, 1935 H Bacon

DESCRIPTIVE REPORT
Field Sheet No.2
Maryland Coast

Instructions:

This work was done in compliance with the Director's instructions of April 27,1933 to the Commanding Officers of the ships Oceanographer, Lydonia, and Gilbert, covering projects HT 142, HT 143, and HT 144.

Limits and Scale:

The scale used on this sheet is 1:40,000.

The area covered extends approximately from lat.38°-06′ to 38°-23′ and long. 74°-38′ to-75°-05′. This sheet joins with field sheets 4 and 3 on the east, 5(Part 1&2) on the south and sheet 7 on the west.

Survey Methods:

Two methods of controlling soundings were used in surveying this area. The western portion was surveyed by the Lydonia using visual-fix control and the eastern portion was surveyed by the Oceanographer using R.A.R. control. The Lydonia used both the fathometer and handlead for sounding but after finding that the fathometer worked erratically and imperfectly in shoal water they resorted to handlead sounding alone. The oceanographer used the fathometer for the general development of the area and the handlead for development of the shoals.

Discrepancies:

Fathometer soundings below ten fathoms and in rapidly shoaling water were found to be rather erratic when compared to handlead soundings on this sheet. This is shown especially well by the shape of the ten fathom curve. The deeper fathometer soundings between Oceanographer positions 69-70B, 66-67B,53-54A and 66-67A cause deep indentations in the ten fathom curve as drawn by the handlead soundings. These indentations appear unwarranted by surrounding handlead soundings and it is recommended that the fathometer soundings between the above positions be disregarded in drawing in the ten fathom curve.

In plotting soundings taken by the Oceanographer handlead soundings were given preference over fathometer soundings, even though the fathometer soundings were shoaler. Fathometer soundings less than 8 fathoms that did not check handlead soundings or that determined a least depth not indicated by surrounding handlead soundings were removed from the sheet.

Although both handlead and fathometer soundings were taken by the Lydonia only the handlead soundings were plotted.

The large discrepancies on many of the crossings may be due to a fluctuation in the fathometer correction; insufficient data for securing velocities with a consequent error in control; a combination of both causes; and a rough, irregular bottom over which a slight displacement of the sounding line or the sounding would result in a good crossing. Below is listed the more serious discrepancies in crossings with the anount, the position, and the probable cause of the discrepancies.

Oceanographer Crossings

Am't(ft)	Fathometer	Control	Combination	Rough Bottom
16	This discrepancy is really not this large since the next sdg checks perfectly R.Z.J.			71-72B &86-87B
7	54-55B&87-88B			
5	7-8B&88-89B			
9	62-63A&88-89B			
5	55-56A&89-90B			
86	4-5A&90-91B			
8	42-43C&37-38G H.L.	42c to 43c fath appears erratic		ditto
8	42-43C&27-28G "			ditto
5		34-35C&42-43B *		
9		34-35C&45-46B *		
13	34-35C&58-59B *			
6	2-3D&20-21A	? NE corr.		
10	2-3D&17-18A			
9	3-4D&60-61A			
10	3-4D&57-58A			
20	15-16D&69-70B	D line accepted		ditto
13	16-17D&67-68B			
4				16-17D&51-52B 52B could be shifted except D line
8				17-18D&35-36B most of B line omitted no control.
9				68A & 27-28E H.L. sdgs on E day used
4				34-35E&52-53A H.L. sdgs on E day used
4				37E & 12-13B " " " " "
5				41-42E&11-12B " " " " "
5	44-45E&53-54A H.L. sdgs on E day accepted			
12				57E & 20-21B sdgs on E day used
5	68-69E&21B " " " "			ditto
5				87E & 105-106E Both H.L. shoalest accepted
5				14F & 48-49E " "
4				19-20F&34-35E H.L. sdg-disrup not serious
6				19-20C&28-28F Both H.L. shoalest used
6				28-29F&51-52E Both H.L. shoalest used
5	36-37F&24-25C F day H.L. sdgs used (C day fath)			
4	16-17D&42-43F F line of H.L. sdgs preferred			ditto
14	61-62F&67-68B B line fath sdgs omitted			ditto
6	61-62F&16-17D F line of H.L. sdgs preferred			ditto
17				64-63F&51-52B Control weak on B line 52B could be shifted
13			HL fath 71-72F&69-70B Fath sdgs on B line omitted	F line of H.L. sdgs
4	73-74F&15-16D H.L. fath used H.L. sdgs of F line.			
8	15-16D&83-84F " " " " "			ditto
18			fath HL 84-85F&69-70B Fath sdgs on B line omitted	

Oceanographer Crossings on Lydonia
(Oceanographer position numbers listed first)

Am't(ft)	Fathometer	Control	Combination	Rough Bottom
5		8-9E&26L		
10		9-10E&9-10M	Control on E line weak – shifted into good agreement	
19		63-64E&17-18N	Both lines on slope – E line shifted slightly into better agreement with N line (3 pt fix control)	ditto
~~16~~ not this large		96-97F&20-21N	Only 1 sdg out of agreement 59 sdg on F line retained as the preceding sdg crossed N line perfectly.	ditto
8		60-61E&31-32N		
5		60-61E&57N		
5		81E & 58-59N		
6				128-129F&61N
6		48F & 64-65N		
6		55-56F&101-102N		
9				76-77E&102N
14		77-78F&107-108N	F.A.R. - F line shifted into better agreement with N line (3 pt. fix)	
4				94-95G&40S used S line
7				1-2H&40-41S used H.L. edge on S line (2 pt fix)

From an inspection of crossings of the Oceanographer's work on the Lydonias, it appears that the handlead work of the Oceanographer on E-day and F-day is too far east. A slight movement of these lines to the westward will in most cases result in good crossings with the Lydonia's work.

The positions 29G' to 40G' in latitude 38°-13' and longitude 74°-50' are contained in records for sheet 4, and were plotted on this sheet because they were outside the limits of sheet 4. → H5351

The distance arcs from buoy CAST were plotted from an incorrect position of that buoy and as a result they do not have the position of CAST as their true center.

The holiday shown in latitude 38°-17.5', longitude 74°-38' was developed by the handlead on sheet 2B. → H5349

The red dotted depth curve in latitude 38°-09', longitude 74°-51' was transferred from sheet 5(Part 2). The red dotted depth curve in latitude 38°-10', longitude 75-04' were transferred from sheet 5(Part 1).

Comparison With Previous Surveys:

On comparing the shoals on this sheet with those on chart 1220 it is found that practically all the shoals are the same in shape and position but that the shoalest points have moved about ½ mile to the southward.

New shoal points found were 36 ft. at latitude 38°-16', longitude 74°-51'; 32 ft. at latitude 38°-16', longitude 74°-53.5'; and 44 ft. at latitude 38°-10', longitude 74°-52'.

Tidal Data:

Tidal data used for reducing soundings was obtained from a standard automatic tide gage stationed at Assateague Anchorage.

Am't(ft)	Fathometer	Control	Combination	Rough Bottom
20			86-87F&66-67B	Fath soundings on weakly controlled B line omitted
14			88-89F&53-54B	Fath soundings on B line omitted
6				105-106F&36-37B Sdgs on B line omitted
6			23C & 107-108F	Used HL sdg on F line
8				108-109F&17-18D used shoaler sdg
8				108-109F&10-11B used " "
10			17-18D&114-115F	used H.L. soundings on F line
27			34-35B&115F	Fath soundings on B line omitted as they do not check with other lines.
6	88-89F & 1G			plotted shoalest soundings
6			4G & 53-54B	G line accepted
8	27-28G&42-43C			Both lines plotted - discrepancy not this great as sdgs do not fall on each other.
4	33-34G&69-70B			Used H.L. sdgs on G line
10	37-38G&42-43C			Used H.L. " " " " Fath soundings on C line do not check other lines.
6	51G & 43-44&C			ditto
14	64-65H&96-97H			H.L. sdgs on G line favored. C line swinging
6				Log readings indicate that pos 64H and pos 65H should be shifted.
5	108-109H&63-64G			9-10D&101-102H used shoaler sdg on D line
12	107-108H&12-13D			H line shifted into better agreement.
5	76-77G&108-109H			" " " " "
8				H line shifted slightly
5				113H & 30-31H used shoalest depth
5				114-115H&47-48H crossing OK
5		20-21J&112-113H		No discrepancy used J line
7				28-29K&40-41H used K line H.L.
5				41K & 20-21H used shoalest depth
6				43K & 92-93G " " "
11	? Discrepancy here only 1 ft.			44-45K&78-79G Crossing OK
4				45-46K&59-60G used shoalest depth
8				51-52K&60-61G used H.L. G line
4				53-54K&91-92G used shoalest
5				55-56K&120H irregular bottom on slope
8			H5351	29-30G&51-52K used shoalest shoalest.
10		(H5351) 35-36G&52-53K		steep slope - used shoalest.

Lydonia Crossings

4		69D & 3-4J	used shoalest ditto
4			23-24F&56-57J F line omitted on turn
5		17-18L&2-3J	ditto
5			54-55L&1-5M
5			17-18J&41P
5			17-18J&52P
5			24-25J&37-38R
4			16-17S&36-37M
5			26-27L&24-25S
5			29-30S&31-32N
5			34 -35S&32D
4			113S & 36-37S
6			15T & 36-37M
4			24-25T&43-44J
4			47-48J&26-27T
4			35-36T&36-37J
6			40N & 12-13J

were examined and accepted shoalest depth generally used

Statistics For Field Sheet No.2

OCEANOGRAPHER

Date	Statute Miles of Sdg Line	No. of Sdgs	No. of Pos.
May 16,1933	89.0	822	69
May 15	121.4	1233	90
June 23	41.4	277	58
June 25	26.8	188	19
June 26	54.5	705	117
June 27	31.6	378	129
June 28	50.8	528	98
June 29	106.2	905	124
July 15	12.7	150	31
July 16	30.0	354	57
TOTAL	564.4	5540	792

LYDONIA

May 2,1933	36.0	72	85
May 3	32.4	45	61
May 4	41.5	40	89
May 5	40.0	74	95
May 9	56.8	273	132
June 23	62.2	50	134
June 24	55.8	108	134
June 25	14.3	139	40
July 11	20.3	247	58
July 19	9.2	80	37
July 26	19.1	206	55
July 27	23.7	247	66
July 28	48.9	478	126
July 29	34.8	350	88
July 30	42.9	438	115
August 9	25.0	267	70
Sept. 19	51.1	478	138
Sept. 30	15.5	150	42
TOTAL	597.1	3742	1565

TOTAL for both ships	1161.5	9282	2357

Respectfully submitted,

Raymond H. Carstens

Raymond H.Carstens
Deck Officer, U.S.C.& G.Survey

Approved and forwarded

H.A.Seran

H.A.Seran, Comdr. C.& G.Survey
Commanding Ship Oceanographer

March 6, 1934

Division of Hydrography and Topography:

Division of Charts:

Tide Reducers are approved in
10 volumes of sounding records for

HYDROGRAPHIC SHEET 5348

Locality Eastward of Great Gull Bank, Coast of Maryland

Chief of Party: Ray L. Schoppe and H. A. Seran in 1933
Plane of reference is mean low water reading
3.5 ft. on tide staff at Assateague Anchorage, Va. (Allowance of 15 minutes earlier made for time of tide at place of soundings)
9.3 ft. below B. M. 17

Height of mean high water above plane of reference is about 4 feet

Condition of records satisfactory except as noted below:

H. A. Marmer

Acting Chief, Division of Tides and Currents

PARTIAL REPORT ON H-5348 V

MARCH. 22, 1934.

1./ Numerous bad crossings on this sheet were marked "DO NOT INK". These crossings are not to be erased from the sheet, but are to be left in pencil for the reviewer to dispose of. An effort was made to improve these crossings by replotting the positions and checking the spacing of the soundings but in the case of crossings wholly controlled by R.A.R. positions - the plotting was found to be correct - leading to the belief that the error must have been in the fathometer soundings or the correction thereto. In the case of the poor crossings where an R.A.R line crossed a visually controlled line - the R.A.R. positions seemed to be correctly plotted - but the three point fix positions all seemed to be plotted east of their true position. A poorly adjusted protractor must have been used in plotting these positions as the verifier's protractor was checked upon noticing a constant difference in the plotting.

2./ When the overlap with H5351 on the eastern extremity of this sheet is made - the overlap should be placed on this sheet i.e. H5348.

Positions 29G' to 40G' (prime) will be found in the sounding volumes for H5351. The control for these positions is on H5351 but as they plot beyond the limits of H5351 - they are shown on H5348. These positions must have been plotted on an auxiliary piece of paper, by the field party and later transferred to H5348. This auxiliary paper could not be located.

3/ The datum the projection of this sheet is referred to was not indicated by the field party.

The degree and minute symbols were not put on the sheet as is required by the Hydrographic Manual.

The pin prick position holes for the three point fixes were as a rule - too large.

Respectfully Submitted
Warren H Bamford

Section of Field Records

REVIEW OF HYDROGRAPHIC SURVEY NO. 5348 (1933)

Eastward of Great Gull Bank, Off Maryland Coast
Instructions dated April 27, 1933 (Oceanographer)
Surveyed in 1933

Hand Lead and Fathometer Soundings - 3 Point Fix and R. A. R. Control

Chief of Party - H. A. Seran, R. L. Schoppe.
Surveyed by - Parties of Steamers Oceanographer and Lydonia.
Protracted by - R. H. Carstens.
Soundings Penciled by - F. S. Trantham.
Verified by - W. H. Bamford, C. R. Bush, Jr.
Inked by - C. R. Bush, Jr., M. S. Gurnee.

1. Condition of Records.

The records are very well kept and conform to the requirements of the Hydrographic Manual. No.definite locations for the comparative soundings were given in the records. Those that could be shown with reasonable accuracy were plotted in the office.

2. Compliance with Instructions for the Project.

The plan, character and extent of the work satisfy the Instructions for the Project, except that no recommendation was made regarding the retention or rejection of the charted wreck in Lat. 38°13.5', Long. 74°56.7' (Par. 14 of Instructions). See paragraph 8, this review.

3. Sounding line Crossings.

As a rule the cross lines do not agree very closely. The majority of the soundings on the western part of the sheet (Lydonia's work) are hand lead soundings and the lines are controlled by visual fixes. On the eastern part (Oceanographer's work), there are a few hand lead soundings, but most of them were obtained with the fathometer and are controlled by R. A. R. The largest discrepancies occur in the latter class. The field party attributes these differences to a combination of causes; a fluctuation in the fathometer correction, insufficient data for securing velocities affecting the control and irregularities in the bottom. They submitted a list of the more serious discrepancies in their descriptive report. All of these crossings were examined and in a number of cases adjustments were made in the office. Most of these adjustments are given in detail in the verifier's report. Hand lead soundings were used in preference to fathometer soundings and the lines with 3 point fix control were favored over lines controlled by R. A. R. All such changes made by the verifier were examined and are concurred in by the reviewer. Fathometer soundings under 8 fathoms were not inked on the sheet except in those cases where the surrounding depths seemed to indicate their correctness.

4. Depth Curves.

The survey is sufficient for completely drawing the usual depth curves.

5. Junctions with Contemporary Surveys.

a. The junctions on the north and west with H-4944 (1929), H-4939 (1929) and H-5357 (1933) and H-5346 (1933), respectively, are satisfactory.

b. The junction at the holiday, in approximate Lat. 38°17', Long. 74°53', with H-5349 (1933) is satisfactory. The soundings from H-5348 (1933) are generally a little deeper but differences are quite small.

c. At the junction on the east with H-5351 (1933) the overlap is adequate but several of the lines between Lat. 38°14' and Lat. 38°16' do not agree with the work on H-5348 (1933). There are several discrepancies of more than 10 feet. The control is about equally strong on the two sheets, and no reason could be found for making adjustments. When shifted into agreement in one place, the lines would cross poorly in another, and it was decided to accept the overlapping lines as plotted. Further discrepancy between these two sheets are considered under junction with H-5350 (1933).

d. At the junction on the south with H-5355 (1933) the overlap is adequate and the soundings are in fair agreement. While there are some lines on which the depths do not check closely, the discrepancies are not large and this junction is considered satisfactory.

e. The junction on the southwest with H-5353 (1933) is satisfactory.

f. The junctions with H-5350 (1933) on the east are satisfactory, except in the vicinity of Lat. 38°19', Long. 74°38'. H-5351 (1933) also joins in this vicinity, but no two of the surveys are in agreement throughout. It was not possible to make any logical adjustment in any of the lines to smooth out these differences. Since the delineation of the 20 fathom curve was involved, this curve was drawn in its most reasonable position (mainly from soundings on H-5348) and those soundings from the overlapping sheets that conflicted with this curve were omitted from H-5348.

6. Comparison with Prior Surveys.

a. H-213 (1849) and H-~~2611~~ 251 (1850).

These surveys show some depths a little shoaler than the new work but there are no outstanding shoals or dangers which were not found on the new survey. In many of these cases approximately the same depth would be found on H-5348 (1933) in a little different position. Most of the sounding lines on H-213 (1849) and all of

the lines on H. 251 (1850) are controlled by cuts taken from two shore stations and these cuts intersect weakly in the off shore areas. Because of the character of the control and because the shoaler soundings on H. 213 (1849) and H. 251 (1850) are not of great importance, the new work (H. 5348-1933) should within its limits supersede H. 213 (1849) and H. 251 (1850) except for one 10 fathom sounding from the latter sheet in lat. 38°13'.1, long. 74°57'.7 which has been carried forward to H. 5348 (1933).

b. H. 1720 (1886).

This survey is on a scale of 1 to 200,000. The lines are spaced about 5 miles apart and soundings are approximately 2 miles apart. As this survey shows no depths much shoaler than the new work, it should be superseded by H. 5348 (1933), within the limits of the latter survey.

c. H. 3314 (1911).

This survey is on a scale of 1 to 200,000. In the areas closest to shore, where visual control was used, H. 3314 (1911) agrees fairly well with H. 5348 (1933) but in the areas further offshore the agreement is poor. The off shore portion of the lines on H. 3314 (1911) are controlled by a rather crude type of dead reckoning, on which there is no evidence that any allowance was made for current or leeway. The outer ends of the lines on H. 3314 may be several miles out of their correct position. Since H. 3314 (1911) shows no dangerous depths it should be superseded by H. 5348 (1933) within the limits of the latter survey.

On the survey of 1912, H. 3314a, the control is defective and the position of soundings only approximate. (See verifier's report, filed in Descriptive Report of H. 3314a, 1912). Only one sounding line from this survey crosses the new work in approximate lat. 38°12', long. 75°04'. H. 3314a (1912) should be superseded by H. 5348 (1933) within this area.

7. Comparison with Chart No. 1220.

The general trend of the shoals are very much the same as shown on the chart, although some of them are in a slightly different position. In most cases shoaler depths were obtained on the new work. The soundings shown on the chart are traceable to our own surveys. The whistle buoy (FL. W)4", east of Little Gull Bank and north of Great Gull Bank, was located approximately 220 m. south of its charted position. The Horizontal Stripe Buoy, which marks the southern end of Little Gull Bank, was located approximately 400 m. S.S.W. from its charted position. Both of these buoys fall outside the limits of the work on this sheet and within the area covered by H. 5346 (1933).

8. Reported Wreck.

The reported wreck which is shown on Chart 1220 in lat. 38°13'.5,

long. 74°56'.7 was charted by authority of H. O. N. to M. 34, 1922. The sounding lines on this work show no indication of this wreck and there is a note in the sounding record (pos. 92S Lydonia) which reads "No trace of charted wreck". The field party made no mention of this wreck in their descriptive report. A definite recommendation would have been desirable as to the retention or rejection of this wreck. Its existence appears to have been fairly well disproved and the wreck symbol should be discontinued in future charting.

9. Field Plotting.

The prescribed amount of field plotting was well done by the field party. There is a slight constant difference in the three point fix positions as plotted in the field and as tested in the office. (See report of W. H. Bamford, attached to Descriptive Report). These positions were not changed however. Numerous shifts and adjustments have been made in the office in order to obtain better agreement of soundings. Most of these lines which have been shifted, changed or omitted, have been listed in the verifier's report. (Report of C. R. Bush, Jr.).

10. Additional Field Work.

No additional work is required within this area.

11. Superseding Old Surveys.

Within the area covered, the present survey, with the indicated additions from previous surveys, supersedes the following surveys for charting purposes:

H. 213	in part.
H. 251	" "
H. 1720	" "
H. 3314	" "
H. 3314a	" "

12. Reviewed by - R. L. Johnston - June 1934.

Inspected by - A. L. Shalowitz.

Examined and approved:

C. K. Green, C. K. Green
Chief, Section of Field Records.

L. C. Dolbear
Chief, Division of Charts.

J. B. Borden
Chief, Section of Field Work.

G. T. Rude
Chief, Division of H. & T.